MAY 1961 — 16 NO. WW 2
VOLUME 87 PART 2

Your attention is invited

NEWS OF THE WATERWAYS AND HARBORS DIVISION OF ASCE

JOURNAL OF THE WATERWAYS AND HARBORS DIVISION
PROCEEDINGS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS

DIVISION ACTIVITIES

WATERWAYS AND HARBORS DIVISION

Proceedings of the American Society of Civil Engineers

NEWS

May, 1961

COMMITTEES OF WATERWAYS AND HARBORS DIVISION

As a direct result of a two-year study by the Water Resources Coordinating Committee, the Waterways and Harbors Division has recently expanded its committee organization. While the ASCE 1961 Official Register listed these new committees, a statement of purpose for each committee was not included. Moreover, many assignments have been made since that document went to press. The present organization and committee assignments for the Division are listed below:

WATERWAYS AND HARBORS DIVISION
AMERICAN SOCIETY OF CIVIL ENGINEERS

Purpose: The advancement and dissemination of engineering knowledge concerning the utilization of waterways and harbors and the protection and development of ocean and other water frontage. This includes studies in the following fields: floods and methods of protection; droughts and methods of alleviation; tidal action, wave action and unusual natural phenomena which affect the stability of shore lines and the navigable capacity or usefulness of waterways and harbors; port development and operation; types of structures and equipment used in navigation, shore protection and flood control engineering, their design, construction, maintenance and the suitability of materials for such use; and the economics of waterborne transportation.

EXECUTIVE COMMITTEE

Richard O. Eaton, Chairman, Evan W. Vaughan, Vice Chairman, Joe W. Johnson, Charles F. MacNish, Daniel B. Ventres, Robert J. Winters, Secretary.

Military Liaison to Waterways and Harbors Division: Joseph M. Caldwell.

Newsletter Editor: Austin E. Brant, Jr.

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ADMINISTRATIVE COMMITTEES

Committee on Cooperation with Local Sections

Purpose: To administer procedures which will establish constructive activities at local section level in the field of interest of this division and will provide support for activities of the division, subject to review of procedures by the Executive Committee of the division, and in accord with policies established by the Society.

Francis G. Christian, Chairman, Floyd D. Peterson, Howard A. Preston, George A. Smith, Harvill E. Weller, Evan W. Vaughan

Committee Members Who Are Local Section Representatives: Joseph B. Converse (Alabama); Howard A. Preston (Columbia); George A. Smith (Indiana); Marvin Bogema (Ithaca); J. Thornton Starr (Maryland); Henry O. Mikelait, Jr. (Miami); Harvill E. Weller (Mid-South); N. C. Magnuson (North Carolina); Alfred C. Winters (Oklahoma); Francis G. Christian (Sacramento); Walter F. Lawlor (St. Louis); Richard F. Lyman, Jr. (San Francisco); Robert B. Nichols (Tennessee Valley - Knoxville Branch); Basil W. Wilson (Texas).

Committee on Publications

Purpose: To administer the solicitation, review and editing of papers in the field of interest of this division, subject to review of procedures by the Executive Committee of the division, and in accord with policies established by the Society.

Jay V. Hall, Jr., Chairman, Eric E. Bottoms, Joseph M. Caldwell, Ellsworth I. Davis, James W. Dunham, Donald R. Forrest, Richard O. Eaton

Committee on Research

Purpose: To initiate, organize, sponsor and coordinate research in the field of waterways and harbors and to further the advancement of waterways and harbors through the coordination of endeavor with divisions having related interests on specific subjects.

Edmund H. Lang, Chairman, Joseph M. Caldwell, Reed A. Elliott, Zusse Levinton, Howard J. Marsden, Joe W. Johnson

Committee on Session Programs

Purpose: To administer the procedures necessary for preparation of programs for sessions sponsored by this division at conventions of the Society or elsewhere, subject to review of procedures by the Executive Committee of the division, and in accord with policies established by the Society.

Mark S. Gurnee, Chairman, Alden K. Sibley (Boston Convention-1960), Robert E. Cron, Jr. (Phoenix Convention-1961), Frank L. Panuzio (New York Convention-1961), Perry M. Boothe (Houston Convention-1962), Evan W. Vaughan

TECHNICAL COMMITTEES

Committee on Coastal Engineering

Purpose: To study and report on methods of stabilizing and improving

coastal inlets and shores which are exposed to the action of waves and currents, and on the design of engineering works for these purposes.
Thorndike Saville, Jr., Chairman, James R. Ayers, Richard O. Eaton, Herbert C. Gee, Kenneth P. Peel, James K. Rankin

Task Committee on Groins for Shore Protection

Purpose: To investigate and report on the present state of knowledge concerning the employment and design of groins for shore protection.
Kenneth P. Peel, Chairman, James W. Dunham, William J. Herron, Jr., Charles E. Lee, Omar J. Lillevang, Morris N. Lipp, George M. Watts

Task Committee on Regulation of Coastal Structures

Purpose: To investigate and report on existing state laws, procedures and organization for the administration and regulation of coastal, tidal and submerged lands.
Herbert C. Gee, Chairman

Task Committee on Sand By-Passing Systems

Purpose: To investigate and report on the present state of knowledge concerning the employment and design of sand by-passing systems at coastal inlets.
Thorndike Saville, Jr., Chairman, Jens P. M. Bruun, Frederick H. Dechant, Stephen R. Middleton, James K. Rankin, Charles Senour, Robert L. Wiegel

Task Committee on Long Period Waves

Purpose: To investigate and report on the causes and effects of long period waves acting on shores, shore structures and installations and on their effect on the utilization of such structures and installations.
Dr. Basil W. Wilson, Chairman, James R. Ayers, David I. Kuchenreuther, Charles L. Vickers, Jr., Dr. William L. Donn, Dr. William G. Van Dorn

Task Committee on Hurricane Protection

Purpose: To investigate and report on methods of establishing design criteria and structure types for protection against hydrodynamic effects of hurricanes.
Dr. Charles L. Bretschneider, Chairman, Herbert C. Gee, Lawrence A. Farrer, John B. McAleer, Robert O. Reid

Task Committee on Wave Forces

Purpose: To investigate and report on methods of determining forces exerted by water waves on structures, and criteria for design of structures for stability against wave attack.
Robert L. Wiegel, Chairman, Robert Y. Hudson, Sr., John T. O'Brien, Lars Skjelbreia, Thorndike Saville, Jr.

Committee on Navigation and Flood Control Facilities

Purpose: To study and report on problems of planning, design, construction,

operation and maintenance of locks, dams, levees, walls and channels, to meet the requirements of navigation and flood control on intercoastal and inland waterways, with particular attention to types and dimensions of locks and dams, types of gates, valves, culverts and other appurtenances, and investigation of practices and trends in barge, towboat and ship sizes and in operating practices.

Lester W. Angell, Chairman, Lawrence H. Burpee, James S. King, Richard V. Meland, Arthur C. Nauman, Harold O. Ogrosky, Edwin P. Swatek, Jr. Charles MacNish, Trafton W. Fleetwood, Jr., Secretary

Task Committee on Inland Waterways Economics

Purpose: To investigate and report on current and prospective requirements for inland waterway transportation, including the competitive status of waterways with respect to other modes of transportation.

Howard J. Mullaney, Chairman, Howard R. Bare, Ruben C. Johnson, Wilfred G. McLennan, Edward G. Wetzel, Bernard J. Witzig

Task Committee on Filling and Emptying Systems for Locks

Purpose: To investigate and report on lock operating systems, including re-use of water by recirculation.

Martin E. Nelson, Chairman; Fred R. Brown, Harvey J. Johnson, James T. Price, G. Carl Richardson

Task Committee on Flood Control Planning

Purpose: To investigate and report on the applicability of various flood control measures, with particular reference to engineering aspects.

James S. King, Chairman; Ralph G. Berk; Charlie M. Moore.

Task Committee on Collateral Usages and Benefits of Multi-purpose Projects Involving Flood Control

Purpose: To investigate and report on collateral usages of flood control projects, with particular reference to conservation, recreation, navigation and urban water supply; and to investigate, evaluate and report on the validity of various methods of computing flood control and collateral benefits included in these evaluations, recognition of risks and uncertainty in such benefits and methods of accounting therefor.

Eugene W. Weber, Chairman, Carter Page, John A. Short

Task Committee on Effects of Floods and Droughts Upon Inland Waterway Navigation

Purpose: To investigate and report on the navigation aspects of river regulation.

A. Joseph Moors, Chairman

Task Committee on Dimensions of Inland Waterways

Purpose: To investigate and report on present and prospective trends in vessel drafts, speeds, and barge tow assemblies and resulting criteria for inland waterway depths, widths, alinement, lock dimensions and bridge clearances.

Edwin P. Swatek, Jr., Chairman

Committee on Ports and Harbors

Purpose: To study and report on the problems affecting the planning, design, maintenance, and operation of ports and harbors, including coordination of port and harbor development with the needs of the locality and those of transportation interests; the possibility of future expansion to meet future needs; types of docks, breakwater jetties, handling equipment, and other facilities.

Ben E. Nutter, Chairman, Carman W. Garrison, Bob N. Hoffmaster, William T. Hogg, Richard G. Krahn, John D. M. Luttman-Johnson, Charles F. MacNish, Horace W. McCurdy, George T. Treadwell, William J. Santina

Task Committee on Mooring Stresses

Purpose: To investigate and report on mooring stresses, associated with the berthing of very large vessels and the design of facilities required.

Task Committee on Cargo Handling Facilities

Purpose: To investigate and report on cargo handling facilities at ports, including terminals and mechanical equipment, with particular regard to their effects upon shipping costs and labor aspects.

Task Committee on Seaborne Transportation Economics

Purpose: To investigate and report on present and prospective coastwise, intercoastal and foreign shipping trends, as an aid in planning future port improvements.

Task Committee on Small Craft Harbors

Purpose: To investigate and report on the planning and design of facilities to provide safe navigation and berthing of small craft, and the economic benefits associated with the small craft industry.

Task Committee on Ship Channels

Purpose: To investigate and report on the engineering and economic aspects of ship channels at ports.

Task Committee on Port Structure Costs

Purpose: To investigate and report on the assignment of the costs of the various contributory port facilities as they apply to charges against the vessel as against the cargo and as against rental for the facilities as against the services performed for the vessel or for the cargo.

Committee on the Regulation and Stabilization of Rivers

Purpose: To study and report on the problems of planning, design, and maintenance of navigable channels by means of dredging, channel alinement, permeable dikes, training dikes, groins, and bank stabilization works, together with causes, effects and methods of protection from floods.

Joseph F. Friedkin, Chairman, Dr. Maurice L. Albertson, Raymond H. Haas, Joe W. Johnson, Clement P. Lindner, Harold H. Sorenson

Task Committee on Bank Stabilization Works

Purpose: To investigate and report on the causes and effects of bank erosion in rivers and the design, construction and maintenance of bank stabilization works.

Harvill E. Weller, Chairman, Francis F. Escoffier, Oliver A. Johnson, Daryl B. Simons, Albert F. Bettle

Task Committee on Maintenance of Navigable Waters

Purpose: To investigate and report on the causes of shoaling in navigable waterways, including shoaling by industrial wastes, the adequacy of dredging methods and equipment, and the design, construction and operation of regulatory structures to prevent shoaling.

Austin B. Smith, Chairman

XXth INTERNATIONAL NAVIGATION CONGRESS

The XXth International Navigation Congress of the Permanent International Association of Navigation Congresses will be held in Baltimore, Maryland from September 11 to September 19, 1961. The subjects to be discussed at the Congress are listed below.

SECTION I - Inland Navigation

QUESTIONS

1. Criteria for the economic justification of new inland navigable waterways or the improvement of existing ones. - Criteria affecting the choice of a new means of communication: water, rail, road or pipelines. - Effects on the creation of new activities taking into consideration the various interests which may be concerned, with special regard to the case where the new waterway would be required to serve regions in which the means of transport are not fully developed.
2. Navigation engineering problems in a system of multiple purpose dams, including:
   a. Layout of sailing line and navigation aids.
   b. Effects of hydropower peaking and flood control operation on navigation.
   c. Location and layout of locks and approach channels.
   d. Filling and emptying system.
   e. Economic considerations in determining size of lock chamber and dimensions of guide and guard walls.
   f. Automatic operation.
3. Measures to be taken to ensure uninterrupted day and night navigation under all weather conditions.

COMMUNICATIONS

1. Propulsion of vessels by push-towing:
   a. Equipment for pushing: (i) Pushers (push-towboats), (ii) Push barges, (iii) Design and arrangement of couplings.

b. Pushed tows (trains of barges): (1) Formations, (ii) Dimensions.
c. Dimensions of pushed tows (trains) admissible on a navigable waterway (lake, river or canal): (i) Width of channel, (ii) Bends (radius, width), (iii) Density of traffic, (iv) Locks.
d. Navigation of pushed tows (trains): (i) Speed, (ii) Stopping, (iii) Maneuverability, (iv) Width taken up in the bends, (v) Backing and Lateral movements, (vi) Crossing and overhauling (overtaking), (vii) Influence of currents, waves, winds.
e. Handling of push barges detached from the tow (train).
f. Push-towing and other modes of navigation on the same waterway.

2. The development of waterway transport on shallow rivers or waterways of modest dimensions; barges and operational plant for such waterways. - Deepening of a navigable pass by means of periodically repeated operations (dredging, "bandelling", etc.). - Possible ways of overcoming the difficulties in underdeveloped countries: shortage of funds and of technical staff.

3. (Communication common to Sections I and II)
   a. Economic layout of structures for the mooring of ships where the banks are sloping or vertical.
   b. Equipment and methods for the loading and unloading of cargo as well as for transshipment; relation to road and rail transport.
   c. Installations at ports for the loading and/or unloading of cargoes in bulk (ores, coal, etc.) excluding liquids, and for their reception and redistribution.
   d. Possibility of utilizing the same plant for different sorts of materials.

SECTION II - Ocean Navigation

QUESTIONS

1. Further study from previous Congresses (XVII, SVIII and XIX) of:
   a. Design and construction of terminals (jetties, dolphins, moorings, etc.) for large ships (oil tankers, ore carriers, etc.) in the open sea, estuaries and large rivers.
   b. Permissible height of waves.
   c. Velocity at impact.
   d. Mooring appliances.
   e. Foundations, especially in soft ground.

2. Orientation and layout of accesses to seaports and the improvement of the channel as far as deep water. - Increasing the depth and maintaining it. - Influence of currents, waves and wind and of the transport of bed material.

COMMUNICATIONS

1. Measures to be adopted for the accommodation of nuclear powered ships in maritime ports.

2. Raising and/or removal of wrecks. - Refloating of stranded or sunken vessels.

3. Methods of determining sand and silt movement along the coast, in estuaries and in maritime rivers. - Use of modern techniques such as radioactive isotopes, luminophors, etc.

(NOTE: See Section I, Communication 3, for subject applicable to this Section also.)

COASTAL ENGINEERING IN JAPAN

The three-volume English edition of "Coastal Engineering in Japan" has recently been published, and the tables of contents of these volumes are listed below. The publication is available from the Japan Society of Civil Engineers, 1-chome, Yotsuya, Shinjuku-ku, Tokyo, Japan, at $1.50 each for Volumes 1 and 2, and $2.50 for Volume 3.

VOLUME I

Chapter	Title
1	Study on the Typhoon Characteristics in Respect of Wave Development and the Distribution of Longshore Current
2	Type of Breakers, Wave Steepness and Beach Slope
3	Pressure of the Breaker against a Vertical Wall
4	Experimental Study of Wave Run-up on Sea Wall and Shore Slope
5	Effect of a Jetty on Nearshore Currents
6	An Experimental Study on the Effect of Coastal Groins
7	Experimental Study on the Equilibrium Slopes of Beaches and Sand Movement by Breakers
8	Study on Littoral Drift and Longshore Current
9	On the Investigation of Beach Erosion along the North Coast of Akashi Strait
10	Sand Transport along a Model Sandy Beach by Wave Action
11	Field Investigation of Suspended Littoral Drift
12	Considerations by Fundamental Test of Jetty in River Mouth

VOLUME II

Chapter	Title
1	On the Ocean Waves Due to Tropical Cyclones
2	The Possible Highest Gravity Waves in Shallow Water
3	Field Investigation of Wave Forces on Breakwater
4	Laboratory Study of Sand Movement and Equilibrium Profiles of Beaches
5	Fundamental Studies on the Dynamics of Sand Drifts (Reports 1 and 2)
6	Field Investigation of Suspended Sediment by the Use of Bamboo Samplers
7	The Measurement of Littoral Drift at Shoreline Harbors

8	Shapes of Shore Structures (Dikes) and Its Damping Effect for Wave Forces
9	The Effects of Coastal Structures on the Littoral Sand Drifts
10	Arrangement of Groins on a Sandy Beach
11	Motion of Sand Particles between Groins
12	The Shock Pressures Exerted by Breaking Waves on Breakwaters
13	An Experimental Study on the Submerged Breakwater
14	The Construction of a Lighted Beacon on a Reef in the Open Sea

VOLUME III

Chapter	Title
1	Studies on Meteorological Tides at the Mouth of the Tone River
2	On the Similitude of Hydraulic Models Involving Tidal Motion
3	On the Density Currents in the Estuary
4	Tsunami Caused by Chile Earthquake in May, 1960 and Outline of Disasters in Northeastern Coasts of Japan
5	Some Additional Remarks on the Chilean-Earthquake Tsunami
6	Wave Overtopping on Seawalls
7	A Study on the Volume of Littoral Drift
8	The Effect and Damage of Submerged Breakwater in Niigata Coast
9	A Study on Beach Erosion at the Sheltered Beaches of Katase and Kamakura, Japan

PRINCETON HOLDS CONFERENCE ON INLAND NAVIGATION AND THE RIVER PORT

On February 16 and 17 Princeton University held a conference at Princeton on this subject, attended by 80 engineers, executives, government officials, and educators from the United States and Canada.

The program of the meeting follows:

Thursday, February 16, 1961

Opening Remarks - James L. Green, Chairman, River and Harbor Program

"The Growth of Traffic on Inland Waterways and the Outlook for the Future" - Brig. General J. L. Person, USA, Retired, Ohio Valley Improvement Association

"Modern Towboats and Barges" - A. C. Ingersoll, Jr., Federal Barge Lines

"Typical Model Studies in Connection with the Improvement of Navigation" - Thomas E. Murphy, U. S. Army Engineer Waterways Experiment Station

Friday, February 17, 1961

"Improvement of the Arkansas River for Navigation" - Brig. General William Whipple, Jr., USA, Retired, New York World's Fair 1964-1965 Corporation

"The Development of a Typical River Port" - L. J. Sverdrup, Sverdrup and Parcel Engineering Company

"Seaport-River Port Development" - Colonel William H. Lewis, USA, Retired, Board of Commissioners of the Port of New Orleans
"The Valley Authority" - Brig. General Herbert D. Vogel, USA, Retired, Tennessee Valley Authority

At the opening of the meeting the participants were welcomed by Dean Joseph C. Elgin, of the School of Engineering, and Professor Norman J. Sollenberger, Chairman of the Department of Civil Engineering. The presiding officer was Professor James L. Green of the Department of Civil Engineering. One of the speakers, Brig. General Herbert D. Vogel, Chairman of the Board of the Tennessee Valley Authority, was prevented from attending by unexpected official duties and his address was delivered by Mr. Nathan E. Way, Assistant to the Chief Engineer of the Tennessee Valley Authority.

The conference was sponsored by the River and Harbor Program under the auspices of the Princeton University Conference and was the fourth conference of this kind held as an activity of the River and Harbor Program. This program in the Department of Civil Engineering, founded in 1953, offers to graduate students in civil engineering an integrated course in river and harbor engineering. Candidates are accepted for both the degrees of Master of Science in Engineering and Doctor of Philosophy. Under this program a library on river and harbor subjects has been developed to concentrate information in this field and make it readily available to students and the profession in general. Considerable interest in the library and its published bibliographies on river and harbor subjects was evidenced by the participants at the conference.

The papers presented at the meeting are soon to be published in a permanent volume which will be distributed to participants and will also be available to the public at a small cost.

Copies of similar publications from previous conferences are still available on:

"Berthing and Cargo Handling in Exposed Locations"
"Shipping and Navigation Problems of the Great Lakes and St. Lawrence Seaway"

Inquiries should be addressed to Professor James L. Green, Department of Civil Engineering, Princeton University, Princeton, New Jersey.

ASCE CONVENTIONS

The ASCE Conventions scheduled for the next several years are as follows:

Oct. 16 - 20, 1961	-	New York, N. Y.
Feb. 19 - 23, 1962	-	Houston, Tex.
May 14 - 18, 1962	-	Omaha, Nebr.
Oct. 8 - 12, 1962	-	Detroit, Mich.
Feb. 25 - Mar. 1, 1963	-	Atlanta, Ga.
May 20 - 24, 1963	-	Milwaukee, Wis.
Oct. 7 - 11, 1963	-	San Francisco, Calif.
Feb. or Mar., 1964	-	Cincinnati, Ohio
May 11 - 15, 1964	-	Salt Lake City, Utah
Oct. 19 - 23, 1964	-	New York, N. Y.
May or June, 1965	-	Minneapolis - St. Paul, Minn.
Oct. 1965	-	Kansas City, Mo.
Oct. 1966	-	Philadelphia, Penna.

PUBLICATION SCHEDULE FOR DIVISION JOURNAL

The Journal of the Waterways and Harbors Division is published in February, May, August, and November.

Material for Newsletter publication should be sent to:

Austin E. Brant, Jr.
Editor, Waterways and Harbors Division Newsletter
Tippetts-Abbett-McCarthy-Stratton
375 Park Avenue
New York 22, N. Y.

PROCEEDING PAPERS, 1950-1960
WATERWAYS AND HARBORS DIVISION
AMERICAN SOCIETY OF CIVIL ENGINEERS

Prepared by the Committee on Cooperation with Local Sections, WW Division: Francis G. Christian, Chairman; Floyd D. Peterson; Howard A. Preston; George A. Smith; Harvill E. Weller; Evan W. Vaughan, Contact Member from Division Executive Committee.

1950

PAPER NO.	TITLE & AUTHOR
9	Atchafalaya River Diversion and Its Effect on the Mississippi River, Leo M. Odom
19	Flood Control Operation of Tennessee Valley Authority Reservoirs, Edward J. Rutter
28	Retrogression on the Colorado River since 1935, J. W. Stanley
29	Sedimentation Studies at Conchas Reservoir in New Mexico, D. C. Bondurant
30	Economic Effects of Reservoir Sedimentation, W. E. Corfitzen
31	Measurement and Analysis of Suspended Sediment Loads in Streams, Martin E. Nelson, Paul C. Benedict
40	Technique of Passing Floods over Earth Dams During Construction, Andrew Weiss
41	Ship Response to Range Action in Harbor Basins, Basil W. Wilson
45	Comprehensive Plan for Columbia Basin, William Whipple
50	Supersonic Sounding Instruments and Methods, Joseph Caldwell

1951

55	Measurement of Sedimentation in Small Reservoirs, L. C. Gottschalk
70	Regime Theory for Self-Formed Sediment-Bearing Channels, T. Blench
71	Rectification of the Papaloapan River in Mexico, Reynaldo Schega
78	River Channel Roughness, Hans A. Einstein, L. Barbarossa
79	Stage Predictions for Flood Control Operations, Ralph E. King
80	Mississippi River Valley Geology and its Relation to the River's Regimen, Harold N. Fisk
83	Waterway Traffic on the Great Lakes, John R. Hardin
110	Review of Flood Frequency Methods—Report of Subcommittee of ASCE Joint Division Committee on Floods.

1952

112	Diversions from Alluvial Streams, C. P. Linder
115	Lake Michigan Erosion Studies, John R. Hardin, William H. Booth, Jr.
148	Bank Stabilization by Revetments and Dikes, Raymond H. Haas, Harvill E. Weller
154	A Navigation Channel to Victoria, Tex., Albert B. Davis, Jr.
159	Development of a Flood Control Plan for Houston, Tex., Ellsworth I. Davis

1953

166	The Design of Flexible Bulkheads, James R. Ayers, R. C. Stokes
181	Slackwater Improvement of the Columbia River, O. E. Walsh
192	Relief Well Systems for Dams and Levees, W. J. Turnbull, C. I. Mansur
220	Studies of Settlement and Seepage at Clark Hill Dam During and After Construction, Frank M. Bell
222	Earth Overflow Dike, Jim Woodruff Dam, James W. Polatty
238	Some Practical Aspects about Beach Erosion in Florida, Morris N. Lipp
240	The Engineering Features of TVA, Clarence E. Blee
254	River Bed Scour During Floods, E. W. Lane, W. M. Borland
259	Salt Water Barriers in the San Francisco Bay, B. L. Nishkian
264	The Fish Rescue Project at the Pacific Gas and Electric Company's Contra Costa Steam Plant, James E. Kerr
275	Wave Wash Control on Mississippi River Levees, Rudolph Hertzberg
318	Some Economic Aspects of Waterways Projects, Haywood R. Faison

1954

409	Deep Water Harbors in the Southeast, D. P. Billard
414	Navigation on the Warrior-Tombigbee River System, Ralph W. Mueller
427	Sediment Sampling in Tidal Waterways, E. A. Schultz
502	Problems Encountered in Improving a Deep Water Harbor, Harry Surgen
503	Development of the Delaware River for Commerce, B. B. Talley

Reprinted from "The Texas Engineer" published by the Texas Section, ASCE, Marehand April 1961.

1955

PAPER NO.	TITLE & AUTHOR
608	Canal and Locks at Chain of Rocks, Mississippi River, A. F. Griffin
609	Shale Foundations for Earth Dams, Delbert B. Freeman
610	Channel Depths for Modern Ports, B. B. Talley
611	Graphic Design of Alluvial Channels, Ning Chien
612	River Surveys in Unmapped Territory, Gerald Matthes
613	Scale Model of the Suez Canal, Paul Blanquet
614	Development of the Port of Lake Charles, La., Elmer E. Shutts
615	Modern Design of General Cargo Marine Terminals, Frank W. Herring
616	Beach Rehabilitation by Fill and Nourishment, Jay V. Hall, Jr., George M. Watts
723	Federal Participation in Small Craft Harbors, Lyman A. Markel
724	Proposed Modern Marine Terminal at San Diego, Joachim E. Liebmann
725	Design Problems—Alamitos Bay Marina, George F. Nicholson
727	The Design of Piers, Jetties and Dolphins, David A. Hopkins
800	Missouri River Plan in Operation, Wendell E. Johnson
801	Control of Arroyo Floods at Albuquerque, New Mexico, Rufus H. Carter, Jr.
802	Upper Minneapolis Harbor Development, Minnesota, L. G. Yoder
803	Flood Control in the Middle Mississippi, Walter F. Lawlor
804	Stiffening Lock Gates by Prestressing Diagonals, Carl L. Shermer
805	Protection of Subsiding Waterfront Properties, Robert R. Shoemaker

1956

906	Old River Diversion Control: The General Problem, John R. Hardin
907	Old River Diversion Control: Hydraulic Requirements, E. A. Graves
908	Old River Diversion Control: Foundation Design, W. J. Turnbull, W. G. Shockley
909	Old River Diversion Control: Structures Required, Norman R. Moore
910	The Design Wave in Shallow Water, R. L. Wiegel, K. E. Beebe
911	A Ripple Tank Study of Wave Refraction, G. C. Ralls, Jr.
912	Destruction of Wave Energy by Vertical Walls, Per Bruun
925	Wave Run Up on Shore Structures, Thorndike Saville, Jr.
926	Houston, Texas, Floodway, Kenneth Heagy
927	Trinity River Flood Control Project, James A. Cotton, W. E. Wood
935	Bridge Clearances: Policies and Practice, Eugene W. Weber
936	Bridge Clearances: The Interest of the Bureau of Public Roads, Walter Kurylo
937	Bridge Clearance: Problem Needs Realistic Approach, William E. Cleary
938	Bridge Clearances: The Operators View, N. L. Caruthers
939	Bridge Clearances: Problems in North Eastern U.S., Erhard E. Dittbrenner
965	Developing Port Faciilties on Houston's Ship Channel, F. H. Newman, Jr.
966	Flood Protection at Wichita and Valley Center, Kansas, M. M. DeGeer
967	Improving the Gulf Intracoastal Canal in Texas, W. P. McCrone
968	Design Problems Involved in Protection from Tsunamis, K. Kaplan
969	New Locks on Lower Mississippi and Gulf Coast, N. R. Moore
975	Control of Rio Grande by United States and Mexico, J. C. Bustamante, J. F. Friedkin
976	Sand By-Passing at a Virginia Tidal Inlet, T. J. McDonald, M. A. Sturgeon
1059	Alternatives to Stone in Breakwater Construction, Reuben J. Johnson, Olin F. Weymouth
1060	The Harrison County Artificial Beach, F. F. Escoffier
1061	Growth of Commerce: Tennessee and Cumberland Rivers, G. M. Dorland, G. R. Bethurum, Jr.
1062	Lower Cumberland Project: Kentucky and Tennessee, Albert E. Dykes
1063	Arrangement of Groins on a Sandy Beach, Shositiro Nagai
1119	Anchorages for Large Tainter Gates, A. H. Kenigsberg
1120	The Apalachicola River Basin Project, C. P. Lindner
1121	The Development of the Cumberland River Basin, Frank P. Gaines, John T. Dennison
1122	Modern Towboat and Barge Design, Harry B. Dyer
1123	Current Trends in Ohio River Traffic and Equipment, Charles R. Michiels, William F. Lail, Robert E. Mytinger
1128	Local Flood Protection Projects, Ohio River Basin, S. M. Bailey, R. E. Karlen, Harry Pockras

1957

PAPER NO.	TITLE & AUTHOR
1208	Rivers Under Influence of Terrestrial Rotation, Otakar W. Kabelac
1209	Flood Control Plan for the Ohio River Basin, Bruce R. Gilcrest, Emil P. Schuleen, Edgar W. Landenberger
1210	Laboratory Study of Wind Tides in Shallow Water, O. J. Sibul, J. W. Johnson
1211	The Littoral Drift Problem at Shoreline Harbors, J. W. Johnson
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